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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,165	12/04/2003	Joshua Gunnar Twait	AUS920030627US1	6786

7590 02/23/2007

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EXAMINER	
WOODS, ERIC V	
ART UNIT	PAPER NUMBER
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/728,165	TWAIT, JOSHUA GUNNAR	
	Examiner	Art Unit	
	Eric Woods	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Prosecution is hereby REOPENED.

The previous grounds of rejection under 35 USC 103(a) against claims 1-23 stand withdrawn.

Therefore, all arguments raised in the Appeal Brief filed 11/28/2006 that were directed at those grounds (namely, the entire brief) are moot.

The Excel reference is no longer being used (pages 8 and 9).

Rejections under Excel, Havre, and Rao are no longer being made (pages 13-17), therefore argumentation with respect to the Rao reference is moot.

With respect to the allegation found on pages 16-17 that the Yonts reference (US 6,590,577) is commonly owned and that it is disqualified from use in a 35 USC 103(a) rejection to the extent that it is ineligible under 35 USC 102(e)(1) or (2) because of 35 USC 103(c)(1), it is respectfully submitted that such reference is also eligible under 35 USC 102(a), as it is invention 'by another' (no common inventors) and it was published on 07/08/2003. Therefore, since the reference is available under another section of 35 USC 102, the invocation of 35 USC 103(c)(1) does not remove the reference. See 37 CFR 1.131(a) for methods of overcoming references available under 35 USC 102(a).

To respond to the argument that the Havre reference 'still does not teach manipulating the graphs of the contributing individual elements in the line graphs by either hiding and then display or reordering their positions,' (page 11) , it has been clearly pointed out that the Simon shows such stacked area graph, Microsoft Excel

allows the user to interact with such graphs, by for example selecting a series in a graph (area in a stacked area graph) and deleting it directly from the chart (see Dodge reference, pages 3-4, Figure 23-6, etc). Next, Havre clearly teaches the user interacting with the graph. Given that such capabilities are known to be inherent in cited software system (Microsoft Excel 2000), the application of such direct interaction capabilities within a chart to the ability of the user within the Havre reference to interact with the graph would be an obvious conclusion. One of ordinary skill in the art would conclude that the direct interaction capabilities within Rao would also further modify the system of Havre and enable all the interaction techniques described therein to be directly applicable to such graphs as described by Hao. Applicant's representative's arguments are directed against the Havre et al reference by itself. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

To respond to the points raised by applicant's representative in the brief filed 11/13/2006 pages 12-13 ('The modifying Hao et al. Publication (US2005/0088441)'), the fact that Hao does not discuss time-dependent variables is not and cannot be relevant, since Hao is not being relied upon for that teaching whatsoever, but rather for the teachings of how to render a graph interactive. Further, in keeping with the standard set forth by *In re Fine*, 5 USPQ2d 1596, 837 F2d 1071, the Hao reference clearly discusses showing both total and aggregate values and that their visualization increases analyst

efficiency, efficacy, and ability to spot trends [0042], which clearly suggests and/or teaches that the use of such techniques renders graphical chart and visualization systems more efficient. Therefore, so long as the primary reference discloses time-dependent stacked-area graphs, which it does, such a combination meets the standard of review established by *In re Zurko* (59 USPQ3d 1693), as there are clear factual predicates underlying the examiner's conclusions.

However, upon further consideration, new grounds of rejection against claims 1-23 under 35 USC 103(a) are presented below in view of various references.

To the extent that applicant's representative explicitly or implicitly relies upon legal precedent to allege that the Office has failed to present a prima facie case as required by 35 USC 103(a), applicant's representative is kindly requested to cite the controlling case(s) so that the examiner can properly evaluate such arguments.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15-20 and 23 are rejected under 35 U.S.C. 101 because they recite non-statutory subject matter. Specifically they recite a computer program per se. A computer program recorded on a computer readable medium is not the same thing as a computer program tangibly embodied on such a medium. Further, the recited instructions are not specified as being executable by a computer. Therefore, they do not meet the test set forth in

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-6, 8-13, and 15-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Excel (Simon, Jinjer. 'Excel 2000 in a Nutshell'. O'Reilly & Associates. 2001) in view of Havre (US 6,466,211), and in view of Hao (US PGPub 2005/0088441 A1).

As to claims 1, 8, and 15 (method, system (processor and display, Hao Figure 1, elements 10, 20, 30, [0011-0013]), and computer program product)

Excel teaches the following limitations:

A computer implemented user interactive method for graphically displaying the proportion of a total value of a time dependent variable contributed by each of a set of elements comprising the steps of: (Excel pages 8-9)

-Displaying the proportion contributed by each element of the same time dependent variable as an area within an ordered set of areas under a line

representative of the total value of said time dependent variable; (Excel pages 8-9, specifically Figure 10-6; Stacked Area Charts. The chart title is 'Total Sales' ('total value'), with dollar value on the y-axis and time points, e.g. specific dates ('time dependent variable'). Two elements or areas -- 'Internet Sales' and 'Retail Sales' ('each element', 'proportion') – are shown under the line showing total dollar value ('ordered set of areas'))

Hao and Havre each partially teach the following limitations.

-Enabling the user to interactively select one of said set of areas; and (Hao clearly teaches allowing the user to interact with such graphs, see [0014-0016], where the user can select the aggregate or elements thereof, as well as the boundary. Specifically, the user can select sub-areas on the graph as in [0035], where the user can select portions of the aggregate data, and the like) (Havre et al discloses that the claimed feature of a computer implemented user interactive method for graphically displaying the proportion of a total value of a time dependent variable contributed by each of a set of elements comprising the steps of: displaying the proportion contributed by each element as an area within an ordered set of areas [i.e. 'shade, dotted areas' in Fig 3; "areas"; 55,57 in Fig 4-6] under a line representative of the total value of time dependent variable ["reference label"; 47, i.e. time]; (See Fig 3, Fig 5, Fig 6) enabling [i.e. "user interface"; 16] the user to interactively select one of set of areas [55,57]; (See 6:21-24, 9:49-54,

etc) (Hao generates graphs involving time-dependent data and other information, in [0027] and similar, specifically stacked-line or bar type of charts in Figure 3D)

-Performing a selected operation selected from the group consisting of hiding the selected area, displaying the selected area and reordering the position of the selected area within said ordered set responsive to said user selection. (Hao clearly teaches that the user can resize, hide, and otherwise alter selected portions of the aggregate as desired in [0035—0036, 0040])(Havre teaches performing a selected operation selected from the group consisting of hiding the selected area [i.e. "the user reduce the number of themes"], displaying the selected area ["selectively display"] and [reordering the position of the selected area within ordered set responsive to user selection]. (See 6:21-24, 9:49-54))

Excel teaches most of the limitations of the claim – namely, the stacked area graph displayed on pages 8-9, which shows the proportions and/or contributions of various elements (sales by state) to a total time-dependent variable (total sales, versus time (by year)), where these are ordered and under a total line – namely, that of total sales, but does not teach that the user can interactively select one of the areas and then reorder its position.

Havre teaches that it is an improvement upon Microsoft Excel, which therefore would mean that the stacked area graph features and functionality of Microsoft Excel would be available within that software for showing the traditional 'stacked line' representation within the software in question. Further,

Havre clearly teaches that the visualization mode in Figure 3 can be an improvement in certain circumstances, for example in visualizing SELECTED ELEMENTS from a SPECIFIC DATA SET and their interrelationship, e.g. the relationship between only three words – (cane, Brazil, and weapons). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Excel to allow the extra visualization capabilities of Havre, and to be able to use a regular stacked area graph (as discussed on Excel page 1) on the bottom of the visualization of Havre (or to add the extra-axis visualization capabilities of Havre to the stacked graphs of Excel in order for the user to better be able to place certain interrelationships in the context of various other, historical events of the like (e.g. a graph of total sales for the airline industry would be more optimally viewed with certain historical events (such as September 11, 2001) noted on the graph to explain large shifts in such relationships, which Havre would provide (among other things). See for example Havre

Finally, note that Havre teaches standard stacked area graphs, as in Figure 5 (6:62-7:20), as having certain benefits for understanding certain graphical capabilities, thusly showing full compatibility with and ability to extend the data sets and capabilities of Microsoft Excel as specified above.

However, Havre does not teach an interactive graph *per se* as required by the latter half of the claim. Therefore, reference Hao is incorporated to cover this limitation. As noted above, Hao clearly teaches that the user can modify the aggregate, change

the boundaries and the sizes of the area, the weights and other parameters, as well as hiding selected areas within the ordered set and reordering the position of data as required in the latter half of the claim.

Excel, Havre, and Hao are analogous arts, since they are both directed to methods of visualizing underlying numerical data sets, and thusly also to the same problem-solving area. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Havre to have the additional flexibility and interactivity in Hao for at least the above reasons. Additionally, Hao provides methods for interacting with graphs, which obviously makes them easier to use and more user-friendly. Hao teaches that such interactivity can allow analysts to visualize data more quickly and understand that data faster, allowing improved service and many other capabilities to understanding underlying data sets [0042].

Finally, since Excel's stacked area graphs are done to illustrate the **total** amount of a variable (e.g. sales), it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Excel such that if the user hid one area, that the total sales curve remained the same, since the entire purpose of a stacked area graph is to allow the user to visualize the relative proportions of each element to a total amount of some kind (e.g. sales by state to total sales, in the Excel example).

However, Havre and Excel do not teach an interactive graph as required by the latter half of the claim. Therefore, reference Hao is incorporated to cover this limitation. As noted above, Hao clearly teaches that the user can modify the aggregate, change

the boundaries and the sizes of the area, the weights and other parameters, as well as hiding selected areas within the ordered set and reordering the position of data as required in the latter half of the claim. Note that Excel further teaches 100% stacked area graphs similar to those of Hao. Note further that the only thing that Hao must is that areas **can be reordered**.

Excel and Hao are analogous arts, since they are both directed to methods of visualizing underlying numerical data sets, and thusly also to the same problem-solving area. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Excel to have the additional flexibility and interactivity in Hao for at least the above reasons. Additionally, Hao provides methods for interacting with graphs, which obviously makes them easier to use and more user-friendly. Hao teaches that such interactivity can allow analysts to visualize data more quickly and understand that data faster, allowing improved service and many other capabilities to understanding underlying data sets [0042].

As to claim 2, clearly the Excel reference teaches a stacked area graph.

Regarding claim 3, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that the selected operation performed is hiding the selected area; and further including the step, responsive to hiding step, of reforming at least one of the remaining displayed areas so as to represent the resulting change of reformed area within ordered set of stacked areas. (See Havre 6:21-24, 9:49-54, also Hao [0035-0036,0040])

Regarding claim 4, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that the selected operation performed is displaying a selected undisplayed area; and further including the step, responsive to step of displaying, of reforming at least one of the other displayed areas so as to represent the resulting change of reformed area within ordered set of stacked areas. (See Havre 6:21-24, 9:49-54)

Regarding claim 5, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that the selected operation performed is reordering the position of the selected area within ordered set; further including the step, responsive to step of reordering the position of the selected area within ordered set, of reforming at least one of the other displayed areas so as to represent the resulting change of reformed area within reordered set of stacked areas. (See Havre 6:21-24, 9:49-54; Hao [0017,0027,0029,0034-0040])

Regarding claim 6, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that displaying a plurality of icons [i.e. "thematic label"; 49] each representative of one of areas whereby the user may select one of areas by selecting the icon representative of the selected area. (See Havre Fig 3, 6:15-25, 9:48-55, and the like, and labels on the various elements, e.g. the word "Brazil" but this would be representative of any type or category of data shown therein). Further, it would be notoriously obvious that a legend could be placed on the graph, as this is done in Microsoft™ Excel, which is noted as background art, and which would be a notoriously and trivially obvious modification that would allow the user to tell at a glance what a particular category of data actually means, although examiner contends that both Havre

and Hao teach this limitation. Examiner also takes Official Notice of this fact, and it is well known in the art. Further, Hao teaches that the graph is interactive and that the user can select a sub-area in [0037] and [0005, 0013, 0035].

Specifically, regarding claim 7, refer to the discussion for the claim 6 hereinabove which is incorporated by reference, Havre et al discloses that displaying a plurality of icons [i.e. "thematic label"; 49] each representative of one of areas whereby the user may reorder the position of the selected area by reordering the position of the selected icon representative of the selected area. (See Havre Fig 3). Clearly as noted above in the rejection to claim 6, which is incorporated by reference, this limitation would be exceedingly obvious in light of Hao's teaching that the user may manipulate the various areas of the graph and select them.

Regarding claims 8-14, claims 8-14 are similar in scope to the claims 1-7, and thus the rejections to claims 1-7 hereinabove are also applicable to claims 8-14.

The additionally recited 'means for displaying' in claim 8 (construed as the display device 38 in the instant application, Figure 1) is monitor 18 in Havre Figure 1, display 15 in Havre Figure 2.

The recited 'means for enabling the user to interact' (construed as mouse 24 and/or keyboard 26, instant application, Figure 1, and programs operable within the computer per se, where the UI adapter 22 **must** be the interface from the mouse to the computer per se, and the software running on CPU 10) consists of Havre Figure 1, mouse 19, keyboard 13, which are collectively user input devices 16, which are shown

interfaced to computer 14, which therefore requires an interface module *per se* and the software is that executing upon processor 20 with attendant presence in memory 22.

The recited 'means for performing' (construed in instant application Figure 1, as software operable upon CPU 10 with programs resident in RAM 14 loaded from various storages devices) is Havre, Figure 2, processor 20, with programs resident in memory 26.

Regarding claims 15-20 (computer program product), claims 15-20 are similar in scope to the claims 1-6, and thus the rejections to claims 1-6 hereinabove are also applicable to claims 15-20.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Excel, Havre et al (6,466,211) in view of Rao et al (6,085,202), and further in view of Yonts (6,590,577).

Regarding claim 21, the combination of Havre et al and Rao et al fail to discloses that selected operation is performed by morphing the displayed stacked area graph through an animated display sequence of stacked graphs. However, such limitation is shown in the teaching of Yonts in an analogous art. [i.e. "tweening and morphing"] (See col. 3 lines 38-52) It would have been obvious to one skilled in the art to incorporate the teaching of Havre et al and Rao et al into the teaching of Yonts, in order to effectively provide display visualization with dynamic process, as such improvement is also advantageously desirable in the teaching Havre et al for providing data representation with improved and fancy image manipulation without complicated manner.

Regarding claims 22-23, claims 22-23 are similar in scope to the claim 21, and thus the rejection to claim 21 hereinabove is also applicable to claims 22-23.

Claims 1-2, 8-9, and 15-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Simon (Simon, Jinjer. 'Excel 2000 in a Nutshell'. O'Reilly & Associates. 2001) in view of Dodge (Dodge, Mark and Craig Stinson. "Running Microsoft Excel 2000." Sample chapter of book posted on Microsoft Learning website, and note copyright date on last page (Secondary copy provided with Figures included; Figures were linked off the main page and were not directly shown; locations in original web document shown with a symbol are shown in document version two, where such have been inserted; these share the copyright date and were present in the same directory)), and in view of Hao et al (US PGPub 2005/0088441 A1)('Hao').

As to claims 1, 8, and 15 (system / method / computer program product; same grounds applicable to all; specific limitation of processor and display discussed separately in clause at end of the generic rejection of 1, 8, and 15 below),

Simon teaches the following limitations:

A computer implemented user interactive method for graphically displaying the proportion of a total value of a time dependent variable contributed by each of a set of elements comprising the steps of: (Simon clearly illustrates graphically

displayed charts in Figures 10-1 through 10-10, etc, and shows the recited proportional graph in Figure 10-6, as described below)

-Displaying the proportion contributed by each element of the same time dependent variable as an area within an ordered set of areas under a line representative of the total value of said time dependent variable; (Simon pages 8-9, specifically Figure 10-6; Stacked Area Charts. The chart title is 'Total Sales' ('total value'), with dollar value on the y-axis and time points, e.g. specific dates ('time dependent variable'). Two elements or areas -- 'Internet Sales' and 'Retail Sales' ('each element', 'proportion') – are shown under the line showing total dollar value ('ordered set of areas'))

Simon does not expressly teach, but Dodge and Hao each partially teach the following limitations:

-Enabling the user to interactively select one of said set of areas; and (Dodge clearly teaches that the user can select one of said areas (that is, the data series as shown in Dodge Figure 23-6 would be the areas shown in Simon Figure 10-6))(Hao clearly teaches allowing the user to interact with such graphs, see [0014-0016], where the user can select the aggregate or elements thereof, as well as the boundary. Specifically, the user can select sub-areas on the graph as in [0035], where the user can select portions of the aggregate data, and the like)

-Performing a selected operation selected from the group consisting of hiding the selected area, displaying the selected area and reordering the position of the selected area within said ordered set responsive to said user selection. (Dodge

discloses that the user can remove a series or area from a chart, as explained in the cited sections above)(Hao clearly teaches that the user can resize, hide, and otherwise alter selected portions of the aggregate as desired in [0035—0036, 0040])(Dodge clearly teaches that a user can remove a data series from a graph (see section 'Remove Data' (pages 3-4) and Figure 23-6).

Simon teaches most of the limitations of the claim – namely, the stacked area graph displayed on pages 8-9, which shows the proportions and/or contributions of various elements (sales by state) to a total time-dependent variable (total sales, versus time (by year)), where these are ordered and under a total line – namely, that of total sales, but does not teach that the user can interactively select one of the areas and then reorder its position.

Simon describes the software package Microsoft Excel 2000. Dodge clearly teaches that the user can select a data series on such a chart and that the user can remove the data series from the chart. Dodge is a teaching reference describing capabilities of the software package Microsoft Excel 2000 that discloses that the user can select an area (e.g. data series) in an Excel chart and remove that area from the chart. The Dodge reference is describing inherent capabilities of the software package and methods of use when dealing with charts. Motivation for combination with Simon is specific from CAFC jurisprudence (cf. Titanium Metals Corporation of America v. Banner, 227 USPQ 773. 778 F2d 775.) and from the fact that the Dodge reference is directed to means of interacting with the graphs that are described as being created by

the software in the Simon reference, which is adjudged to be an obvious combination under product and process for using it logic.

However, Simon and Dodge fail to expressly disclose that Excel 2000 allows the user to directly select one of the set of areas. Allowing the user to select a data series (which would be an area in the stacked area graph shown by Simon) via the legend is not per se interactive in the sense of the narrow definition found in the specification. Therefore, reference Hao is incorporated to cover this limitation. As noted above, Hao clearly teaches that the user can modify the aggregate, change the boundaries and the sizes of the area, the weights and other parameters, as well as hiding selected areas within the ordered set and reordering the position of data as required in the latter half of the claim [0035].

Simon/Dodge and Hao are analogous arts, since they are both directed to methods of visualizing underlying numerical data sets, and thusly also to the same problem-solving area. (See **Response to Arguments** above for further discussion). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Simon/Dodge to have the additional flexibility and interactivity in Hao for at least the following reasons. Hao provides methods for interacting with graphs, which obviously makes them easier to use and more user-friendly. Hao teaches that such interactivity can allow analysts to visualize data more quickly and understand that data faster, allowing improved service and many other capabilities to understanding underlying data sets [0042]. Further, the methods of Hao allow the user to perform operations in a manner that is faster than that offered by

Excel, since Excel requires reversion to the chart configuration menus for some operations and the system of Hao allows the user to interactively operate upon the chart areas itself in order to reduce the number of individual operations required to affect the desired changes in the underlying chart. As such, it offers a prima facie improvement in productivity and efficiency that provides a prima facie motivation for such a combination.

As to claim 8 specifically, Rao shows a computer containing a data processor (Figure 1, element 20) and a display (Figure 1, element 30) [0011-0013].

As to claims 2, 9, and 16, Simon clearly shows a stacked area graph.

Claims 3-6, 10-13, and 17-20 are rejected under 35 USC 103(a) as unpatentable over Simon/Dodge, Hao, and Havre (US 6,466,211).

As to claim 3, Simon/Dodge teaches the removal of a series from the chart, and Hao clearly teaches 'the dynamic selection of an area of the ... graph by the user' [0035] wherein such information can be 'made invisible and hidden in the property of a graph' (Abstract, [0042]). Clearly the idea of hiding the specified or selected area exists and is provided by the references, wherein Hao simply improves the method described by Dodge. Dodge clearly shows in Figure 23-6 that the specified series is removed from the chart, which therefore means that the step of automatically reforming the graph occurs upon the removal of a particular data series.

However, Havre et al discloses that the selected operation performed is hiding the selected area; and further including the step, responsive to hiding step, of reforming at least one of the remaining displayed areas so as to represent the resulting change of

reformed area within ordered set of stacked areas. (See col. 6 line 21-24, col. 9 line 49-54; Also See Abstract line 24-29, col. 6 line 15-20, col. 26 line 37+ in Hao et al)

Motivation for combination of Havre with the various references as set forth below.

Havre teaches that it is an improvement upon Microsoft Excel, which therefore would mean that the stacked area graph features and functionality of Microsoft Excel would be available within that software for showing the traditional 'stacked line' representation within the software in question. Further, Havre clearly teaches that the visualization mode in Figure 3 can be an improvement in certain circumstances, for example in visualizing SELECTED ELEMENTS from a SPECIFIC DATA SET and their interrelationship, e.g. the relationship between only three words – (cane, Brazil, and weapons). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Excel to allow the extra visualization capabilities of Havre, and to be able to use a regular stacked area graph (as discussed in Simon as above) on the bottom of the visualization of Havre (or to add the extra-axis visualization capabilities of Havre to the stacked graphs of Excel in order for the user to better be able to place certain interrelationships in the context of various other, historical events of the like (e.g. a graph of total sales for the airline industry would be more optimally viewed with certain historical events (such as September 11, 2001) noted on the graph to explain large shifts in such relationships, which Havre would provide (among other things).

Finally, note that Havre teaches standard stacked area graphs, as in Figure 5 (6:62-7:20), as having certain benefits for understanding certain graphical capabilities, thusly showing full compatibility with and ability to extend the data sets and capabilities of Microsoft Excel.

Regarding claim 4, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that the selected operation performed is displaying a selected undisplayed area; and further including the step, responsive to step of displaying, of reforming at least one of the other displayed areas so as to represent the resulting change of reformed area within ordered set of stacked areas. (See col. 6 line 21-24, col. 9 line 49-54; Also See Abstract line 24-29, col. 6 line 15-20, col. 26 line 37+ in Hao et al)

Regarding claim 5, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that the selected operation performed is reordering the position of the selected area within ordered set; further including the step, responsive to step of reordering the position of the selected area within ordered set, of reforming at least one of the other displayed areas so as to represent the resulting change of reformed area within reordered set of stacked areas. (See col. 6 line 21-24, col. 9 line 49-54; Also See Abstract line 24-29, col. 6 line 15-20, col. 26 line 37+ in Hao et al)

Regarding claim 6, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that displaying a plurality of icons [i.e. "thematic label"; 49] each representative of one of areas whereby the user may select one of areas by selecting the icon representative of the selected area. (See Fig 3, Also See Abstract line 24-29, col. 6 lines 15-20, col. 26 line 37+ in Hao et al)

Regarding claim 7, refer to the discussion for the claim 1 hereinabove, Havre et al discloses that displaying a plurality of icons [i.e. "thematic label"; 49] each representative of one of areas whereby the user may reorder the position of the selected area by reordering the position of the selected icon representative of the selected area. (See Fig 3, Also See Abstract line 24-29, col. 6 lines 15-20, col. 26 line 37+ in Hao et al)

Regarding claims 10-13, claims 10-13 are similar in scope to the claims 3-6, and thus the rejections to claims 3-6 hereinabove are also applicable to claims 10-13.

Regarding claims 17-20, claims 17-20 are similar in scope to the claims 3-6, and thus the rejections to claims 3-6 hereinabove are also applicable to claims 17-20.

Claims 7 and 14 are rejected under 35 USC 103(a) as unpatentable over Simon, Dodge, Havre, and Hao as applied to claims 1 and 8 above, and further in view of Chedgey (US 2004/0205726).

Specifically, regarding claim 7, refer to the discussion for the claim 5 hereinabove which is incorporated by reference for purposes of discussing the reordering of areas (motivation for incorporating Havre with Simon/Dodge and Hao is taken from such incorporated material), Havre et al discloses that displaying a plurality of icons [i.e. "thematic label"; 49] each representative of one of areas whereby the user may reorder the position of the selected area by reordering the position of the selected icon representative of the selected area. (See Havre Fig 3). Clearly as noted above in the rejection to claim 6, which is incorporated by reference, this limitation would be

exceedingly obvious in light of Hao's teaching that the user may manipulate the various areas of the graph and select them.

Nonetheless, while the above references suggest removing areas, and clearly state that Excel 2000 (Dodge / Simon) can reorder data series (e.g. areas within a stacked area graph), such rearrangement requires the user to open the chart menu and physically change the order of the data series, which does not occur by icon. Reference Chedgey is brought in to cover the specific limitation of rearranging elements of the graph by selecting icons and/or labels. Chedgey teaches a system for graphing data to understand dependencies and better visualize data, so it is both an analogous art and directed to the same problem-solving area. Specifically, Chedgey teaches that in [0115-0119, particularly 0116] the user may rearrange nodes and/or sets of nodes, and that icons are used as representative data in [0133] as a label, and the like. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Simon/Dodge, Hao, and Havre to utilize this technique of Chedgey because (Abstract, [0016], [0059-0060], etc) it provides a more efficient means of expanding sub-nodes and understanding important interrelationships, such as weighting, which the Hao reference clearly allows the user to manipulate as above.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon, Dodge, and Hao as applied to claims 1, 8, and 15 and the like, and further in view of Yonts (6,590,577).

Regarding claim 21, the combination of Simon, Dodge, and Hao fail to discloses that selected operation is performed by morphing the displayed stacked area graph

through an animated display sequence of stacked graphs. However, such limitation is shown in the teaching of Yonts in an analogous art. [i.e. "tweening and morphing"] (See Yonts 3:38-52) It would have been obvious to one skilled in the art to incorporate the teaching of Simon, Dodge, and Hao into the teaching of Yonts, in order to effectively provide display visualization with dynamic process, as such improvement is also advantageously desirable in the teaching of Hao et al for providing data representation with improved and fancy image manipulation without complicated manner and for dynamic visualization purpose [0042].

Regarding claims 22-23, claims 22-23 are similar in scope to the claim 21, and thus the rejection to claim 21 hereinabove is also applicable to claims 22-23.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Woods whose telephone number is 571-272-7775. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Eric Woods

January 25, 2006

SUPERVISORY PATENT EXAMINER